CITY OF RIVERBANK
HAZARD MITIGATION PLAN

June 2010

TABLE OF CONTENTS

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
PLANNING PROCESS

REQUIREMENT - §201.6(C)(1)

Section 1 – Planning Process

The City of Riverbank is working jointly with the County of Stanislaus to prepare a multi-jurisdictional Hazardous Mitigation Plan. The Hazard Mitigation Planning Committee was formed which consists of the OES Coordinator, Planning Director, Police Chief, Public Works Director, Finance Director, City Manager, GIS Consultant, and the Consolidated Fire Department. The team met on numerous occasions to decide what major hazards were to be included in the plan. In addition, the OES Coordinator attended Operational Area multi-jurisdictional meetings, to participate and represent the community.

The Local Hazard Mitigation Plan incorporated information from the Safety and Seismic Safety Element of the General Plan, the City Emergency Operations Plan, and reviewed the standard operating procedures of the Planning Department.

The original plan was adopted by the Riverbank City Council in a public meeting on August 22, 2005. The June 2010 version is set to be adopted by the same body in a public meeting once preliminary approval from the Office of Emergency Services has been obtained.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
RISK ASSESSMENT

REQUIREMENT - §201.6(C)(2)

Section 2 – Risk Assessment

The City of Riverbank identified several hazards that are addressed in the Hazardous Mitigation Plan. These hazards were identified through a process that utilized input from the planning team. The City worked closely with Stanislaus County's Geographical Information Department (GIS) to map the City's infrastructure, critical facilities, and land uses. Data from this study was used to determine those hazards that present the greatest risk to the City.

The City of Riverbank planning team has identified four natural hazards. These hazards were identified because they have the greatest potential to cause a negative impact on the city. They are:

1. Earthquake
2. Landslide
3. Dam Failure
4. Flooding

The City of Riverbank's Safety Element of the General Plan assesses development risks from the identified four natural hazards and sets policies for current and future development. The following policies reflect the City's efforts to minimize the vulnerability of certain land uses and development trends and influenced the mitigation goals and actions discussed later:

> Policy SAFE-1.4: The City will require set backs, ignition resistant building materials, or other measures to reduce exposure to potential wildfires in areas designated for natural open space preservation, in coordination with California Department of Forestry and Fire Protection recommendations and Maintenance of Defensible Space Measures, as appropriate.

Policy SAFE-1.5: Approved plans, projects, and subdivision requests will ensure adequate fire flow per City and Fire District standards. The installation of automatic sprinklers may, at the City's discretion and in coordination with fire service providers, allow for a reduction in the required fire flow.

Policy SAFE-1.6: The City will not allow the development of housing in the 100-year floodplain as determined by the Federal Emergency Management Agency. The City may permit placement of non-residential improvements within the 100-year floodplain under a very limited set of circumstances. Any development project that includes structures or disturbances of natural features within the 100-year floodplain shall prove that the proposal does not:

- Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads, or intended use.
- Create difficult emergency vehicle access in times of flood.
- Create a safety hazard due to the unexpected heights, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site.
- Create excessive costs in providing governmental services during and after flood conditions, including maintenance and repair of public facilities.
- Interfere with the existing waterflow capacity of the floodway.
- Substantially increase erosion and/or sedimentation.
- Contribute to the deterioration of any watercourse or the quality of water in any body of water.

Policy SAFE-1.7: The City will require any public facilities in the 100-year flood zones to be floodproofed to a point at or above the base flood level elevation from the Stanislaus River.

Policy SAFE-1.8: The City will require that hazardous materials are used, stored, transported, and disposed in a safe manner and in compliance with local, State, and federal safety standards.

Policy SAFE-1.11: Proposed developments located within river bluff areas and other areas prone to geologic and soil limitations require a detailed geotechnical study prepared by an independent qualified geologist approved by the City. Approved plans, projects, and subdivision requests shall incorporate measures to reduce risks identified in the geotechnical study, to the City's satisfaction.

Policy SAFE-1.12: The City will not allow the location of water wells in areas where subsidence could occur as a result or where existing

potential for subsidence could be increase as a result of operation of a domestic water well.

Policy SAFE-2.2: The City will consult with fire protection service providers in reviewing development proposals. Development proposals will include City conditions that respond to concerns of fire protection service providers.
Policy SAFE-2.3: New developments will provide fire flow as required in the Public Facilities and Services Element of the General Plan and relevant City Master Plans.

Implementation Measure SAFE-2: The City will, in coordination with the County Office of Emergency Services, implement and periodically update disaster plans, including the City's Emergency Operations Plan, to meet federal, State, and local emergency requirements. Included in this work will be the identification and planning for evacuation routes for dam failure, flooding, and wildfire that may affect existing developed areas of the City, as well as new growth areas.

Implementation Measure SAFE-6: The City will update the General Plan using data to be made available by the Department of Water Resources and the Central Valley Flood Protection Board. The City will update the Land Use Element, Conservation and Open Space Element, Safety Element, and other elements, as appropriate, to ensure adequate flood protection. Flood-related revisions to the General Plan will integrate data from the State Plan of Flood Control. For flood-related revisions to the Safety Element, the City will consult with the Central Valley Flood Protection Board and local flood protection agencies serving the Planning Area, consistent with State law. Following flood-related updates to the General Plan, the City will revise applicable development standards, including the Zoning Code, for consistency on flood protection policies. Subdivision approvals, development agreements, permits, and other City entitlements will incorporate these revised City policies and regulations. The City will coordinate on Stanislaus County's development of a flood emergency plan following the adoption of the Central Valley Flood Protection Plan.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
HAZARD IDENTIFICATION

REQUIREMENT - §201.6(C)(2)

Section 3.1 – Risk Assessment Hazard Identification

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
EARTHQUAKE	• City General Plan Safety Element • County Emergency Operations Plan	• Potential to cause harm

There are no faults known to exist within the City of Riverbank, however faults do exist within Stanislaus County. In the extreme eastern parts of the county, the Bear Mountain and Melones faults are found, though believed to have been inactive for the past 150 million years. No faults are currently known to exist within the valley portion of the county.

The Calaveras and Hayward Faults are major Quaternary faults (generally, no evidence of recent displacement but clearly recognized by terrain features) are located 53 miles west of Riverbank in Santa Clara County. Fault creep slippage has been observed in portions of both of these faults. In other words, portions of these faults are stable where other portions are not.

It is not anticipated that an earthquake would occur in Stanislaus County. However, a major quake (8 or above on Richter scale) in our adjacent counties could possibly cause our county to see shakings in the 6 or even 7 reading. Shaking of this magnitude could cause some severe damage in the City of Riverbank, particularly in some of the older buildings that have more than one story and in the underground utilities.

Although the City of Riverbank has had no recorded seismic activity, it is imperative that we plan for a potential earthquake disaster. In any earthquake, the primary consideration is saving lives. Time and effort must also be given to providing for people's mental health by reuniting families, providing shelter to the displaced persons and restoring basic needs and services. A major effort will be needed to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities and provide continuing care and temporary housing for affected citizens.

It is clear that the most likely impact to the City of Riverbank may well be related to the indirect effects of major earthquake activity on a faults system adjacent to Stanislaus County. While direct damage may be minimal, the indirect effect of mass relocation, mutual aid activities, support activities and collateral damage could severely tax the capabilities of local resources.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
HAZARD IDENTIFICATION

REQUIREMENT - §201.6(C)(2)

Section 3.2 – Risk Assessment Hazard Identification

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
LANDSLIDE	• City General Plan Safety Element • County Emergency Operations Plan	• Potential to cause harm

The entire north side of the City is composed of geological formations that, due to structures, slope, runoff, lack of vegetation, earthquake and human activity, are considered extremely susceptible to failure and sliding.

There is no history of landslides throughout the City of Riverbank. However, it is noted that the steep slopes and undesirable geology present risks in certain conditions.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
HAZARD IDENTIFICATION

REQUIREMENT - §201.6(C)(2)

Section 3.3 – Risk Assessment Hazard Identification

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
DAM FAILURE	• City General Plan Safety Element • County Emergency Operations Plan	• Potential to cause devastation.

Dam failure is the collapse or failure of an impoundment that causes significant downstream flooding. A severe storm, earthquake or erosion of the embankment and foundation leakage may cause the collapse and structural failure of Melones Dam. Seismic activity may also cause inundation by the action of a seismically induced wave that overtops the dam without causing failure of the dam, but significant flooding downstream.

The New Melones Dam will have a direct effect on the City of Riverbank. Should this dam fail, the entire City of Riverbank would have water. We estimate that it will take approximately 2 ½ hours for the water to get to the City. The inundation maps indicate 5 to 10 feet of water at City Hall. The water would be moving at approximately 5 miles per hour, crest at 5-10 feet and begin subsiding almost as rapidly as it comes in. When the dam has emptied, there is no more.

Evacuation routes out of town would be south, primarily using Claus and Terminal/Santa Fe. Residents would be informed to evacuate to Empire and Waterford, and avoid Modesto that will also likely be flooded.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
HAZARD IDENTIFICATION

REQUIREMENT - §201.6(C)(2)

Section 3.4 – Risk Assessment Hazard Identification

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
FLOOD	• City General Plan Safety Element • County Emergency Operations Plan	• Previous instances

The Stanislaus River has had a history of flooding in the past. However, even during its worst stages, the City of Riverbank was only minimally affected, with some flash flooding in the older neighborhoods, and at the 1st Street bridge that crosses the Stanislaus River. That bridge has since been replaced and the problem has been corrected.

The primary flood control concerns for the City of Riverbank are the controlled or uncontrolled releases from the New Melones Dam into the Stanislaus River. Most flood conditions are from heavy, prolonged rain or rapid snow thaw. Flooding could involve loss and damage to properties and agricultural land, and interruption of government infrastructure.

In the past years, substantial action has been taken to reduce flood hazards. The construction of the New Melones Dam on the Stanislaus River has permitted officials to monitor flows of water in those rivers, significantly reducing the chances of flooding.

For the City of Riverbank's emergency organization, there are two flood stages:

WARNING STAGE – The stage at which initial action must be taken by concerned interests (livestock warning, removal of equipment from lowest overflow areas, or general surveillance of the situation). This level may produce over bank flows sufficient to cause minor flooding of low-lying lands and local roads.

FLOOD STAGE – The stage at which over bank flows are of sufficient magnitude to cause considerable inundation of land and roads and/or threat of significant hazard to life and property.

No Riverbank properties are reflected in Repetitive Flood Loss Area Maps, so are not assessed further.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
FACILITY VULNERABILITY ASSESSMENT

REQUIREMENT - §201.6(C)(2)

Section 4 – Facility Vulnerability Assessment

The table that follows reflects the estimated values for facilities that might be impacted by earthquakes, flooding, and dam inundation, while only a few of the properties would likely be impacted by landslides. Properties newly constructed reflect actual construction costs, while the rest of the properties have annually adjusted values using the current Marshall and Swift trend factors based on an appraisal done by the Central San Joaquin Valley Risk Management Authority.

Table 1: Facility Vulnerability Assessments

APN	Name	Description	Real Value	Pers Value	Total Value
074-0614	Riverbank Sports Complex	Snack Shack and Concession Stand		$240,172	$240,172
074-18-20	Well 5	River Heights Well	$972,141		$972,141
074-20-11	Lift Station #7	Silverrock Lift Station	$482,200		$482,200
075-36-05	Lift Station #6	Colony Park	$482,200		$482,200
075-06-35	Lift Station #9	Candlewood Lift Station	$482,200		$482,200
075-90-62	Harless Park	Playground Equipment		$59,574	$59,574
075-90-62	Harless Park	Picnic Tables, BBQS, Benches		$12,759	$12,759
075-09-47	Welcome to Riverbank Sign	Water Fountain Sign	$525,173		$525,173
075-97-43	Well #10	Oakdale Road	$1,060,840		$1,060,840
075-13-28	Silva Community Park	Playground Equipment		$99,290	$99,290
075-13-28	Silva Community Park	Benches, Picnic Tables, BBQS, Garbage Cans		$24,425	$24,425
075-16-04	Lift Station #3	Virginia Lift Station	$289,320		$289,320
075-18-06	Castleberg Park	Gazebo	$199,081		$199,081
075-18-06	Lift Station #2	Townsend Lift Station	$482,200		$482,200
075-18-06	Castleberg Park	Play Structure		$59,822	$59,822
075-18-06	Castleberg Park	Snack Shack; Concession Stand	$62,567	$10,795	$73,362

075-18-06	Castleberg Park	Restroom Facilities	$593,505		$593,505
075-43-03	Lift Station #5	Jackson Lift Station	$337,540		$337,540
075-43-49	Well 3	Well	$875,322		$875,322
075-45-39	Crawford Lift Station	Lift Station; 25' City Easement		$750,000	$750,000
075-46-27	Safreno Park	Park-Play Structure		$49,866	$49,866
075-46-27	Well 7	Crossroads Park Well	$972,702		$972,702
075-47-69	Greenbelt Area	Park			$0
075-48-01	Zerillo Park	Restroom Facilities	$65,480		$65,480
075-48-01	Zerillo Park	Tennis Courts		$200,000	$200,000
075-48-01	Zerillo Park	Park - Play Structure		$39,866	$39,866
075-48-02	Greenbelt Area	Park			$0
075-48-03	Greenbelt Area	Park			$0
075-48-03	Greenbelt Area	Park			$0
075-52-45	Lift Station #1	Rivercove Lift Station	$482,200		$482,200
075-59-61	Well 8	Well	$1,061,805	$135,053	$1,196,858
075-63-01	Water Storage Tank 2	Storage Tank	$418,053		$418,053
075-63-02	Rotary Centennial Park	Playground Equipment		$19,858	$19,858
075-63-02	Rotary Park Basin	Storm Drain Basin (Prospector Parkway)		$400,000	$400,000
075-70-04	Sorenson Park	Shade Structure	$9,644		$9,644
075-70-04	Sorenson Park	Playground Equipment		$19,858	$19,858
075-70-04	Sorenson Park	Benches, BBQS, Picnic Tables		$5,064	$5,064
075-75-31	Well 9	Well	$1,060,840		$1,060,840
075-76-55	Silva Park & Basin	Storm Drain Basin (Novi Dr.)		$400,000	$400,000
132-03-44	Corporation Yard	Trailer for office	$118,549	$33,457	$152,006
132-03-44	Well 4	Pioneer Park Well	$875,453		$875,453
132-03-44	Pioneer Park	Play Structure	$29,866		$29,866
132-03-44	Pioneer Park	Scout Hall	$880,528	$56,579	$937,107
132-03-44	Pioneer Park	Restroom Facilities	$47,828		$47,828
132-03-48	Corporation Yard	Equipment Shed	$144,708		$144,708
132-03-48	Corporation Yard	Motor Pool; Break Room; Restroom	$239,212		$239,212
132-03-48	Corporation Yard	Restroom Facilities	$72,636		$72,636
132-03-48	Corporation Yard	CNG Station - Currently being constructed	$1,371,135		$1,371,135
132-47-75	Well #12	Chief Tucker Ave.	$1,680,417		$1,680,417
132-05-01	Hutcheson Park	Park - No Ammenities		$1,986	$1,986
132-10-43	Police Department	City Building	$1,452,816	$407,529	$1,860,345
132-10-45	City Hall	City Building	$591,477	$277,063	$868,540
132-10-46	Carnegie Hall Museum	City Building	$223,757	$28,523	$252,280
132-11-01	Staley Park	Skate Park Restroom	$38,576		$38,576

132-11-01	Staley Park	Picnic Tables, Benches, Garbage Cans;	$12,759		$12,759
132-11-18	City Hall South	City Building	$558,534	$98,092	$656,626
132-13-09	Community Center	Meeting Hall	$1,732,733	$110,948	$1,843,681
132-13-09	Community Center Park	Play Structure		$50,000	$50,000
132-13-09	Community Center Park	Showers	$496,678	$20,878	$517,556
132-13-09	Community Center Park	Restrooms	$136,242		$136,242
132-13-09	Community Center Park	Gazebo	$61,971		$61,971
132-15-32	Well 2	8th Street Pump House	$827,149		$827,149
132-17-29	Water Storage Tank 1	2nd Street	$418,053		$418,053
132-34-19	Storm Basin #1	Santa Fe & Condray		$400,000	$400,000
132-61-23	Well 6	Well	$875,864		$875,864
132-61-23	Douglas Whorton Park	Park - Play Structure		$32,382	$32,382
132-63-46	Lift Station #4	Talbot Lift Station - Roselle Ave	$482,200		$482,200
		Total Facilities = 67	**$24,284,154**	**$4,043,839**	**$28,327,993**

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
MITIGATION STRATEGY

REQUIREMENT - §201.6(C)(3)(i)

Section 5.1 – Local Hazard Mitigation Goals

The City of Riverbank Hazard Mitigation Planning Committee met on numerous occasions to review and analyze the risk assessment studies that were performed by the City. The Committee developed goals and objectives based on the risk assessment studies and selected those that were determined to be of greatest benefit in hazard reduction to the City. The goals and objectives are as follows:

EARTHQUAKE:

- Goal 1: Minimize damage associated with earthquakes
    - Objective 1.1: Implement measures to minimize damage from earthquakes.
    - Objective 1.2: Protect the loss of life and property stemming from the impacts of earthquakes.

LANDSLIDES

- Goal 1: To prevent damage associated with landslides.
    - Objective 1.1: Protect the safety of our residents from known hazards.

DAM FAILURE

- Goal 1: To get residents out of harms way

- Objective 1.1: Facilitate a calm and safe evacuation of the City.

FLOODING:

- Goal 1: Reduce flood damage in Riverbank.
  - Objective 1.1: Minimize future damage due to the flooding of the Stanislaus River.
  - Objective 1.2: Minimize future damage due to storm events.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
MITIGATION STRATEGY

REQUIREMENT - §201.6(C)(ii)

Section 5.2 – Identification and Analysis of Mitigation Actions

The City of Riverbank has identified a number of hazard mitigation actions and projects. The Hazard Mitigation Planning Committee, with input from local government agencies, has selected the following actions as the most beneficial for the City of Riverbank. These actions are listed following the goals and objectives. What follows are the most vulnerable areas identified in the risk assessment and the highest priority mitigation actions identified for those areas.

- The Burneyville neighborhood located in the northeast quadrant of Riverbank along the Stanislaus River.
- The Rivercove subdivision located in the northwest quadrant of Riverbank along the Stanislaus River. The subdivision is protected by a levee. The City will continually monitor to ensure that the levy is maintained.
- The Riverside neighborhood with homes backing on the Stanislaus River could be prone to landslides.

<u>The following are the most appropriate actions by goal:</u>

<u>EARTHQUAKE:</u>

- <u>Goal 1: Minimize damage associated with earthquakes</u>
    - Objective 1.1: Implement measures to minimize damage from earthquakes.
        - **Action 1.1.1:** Continue to examine plans and perform inspections in accordance with the California Building standards.
        - **Action 1.1.2:** Continue to build infrastructure designed by Registered Civil Engineers and inspected by certified personnel.

- **Action 1.1.3:** Encourage downtown revitalization efforts to include seismic retrofitting of historic structures.

- Objective 1.2: Protect life and property resulting from upset conditions associated with earthquakes.

  - **Action 1.2.1:** Follow the procedures outlined in the Emergency Operations Plan for the City of Riverbank.
  - **Action 1.2.2:** Facilitate massive evacuation by support and encourage the deployment of intelligent transportation devices to facilitate emergency responses as well as evacuation procedures.
  - **Action 1.2.3:** Continue the public works department efforts in preventing debris from entering the storm water system.
  - **Action 1.2.4**: Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.

- Objective 1.3: Ensure key personnel are NIMS trained.
  - **Action 1.3.1:** Plan for succession in emergency services training
  - **Action 1.3.2:** Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.

LANDSLIDES

- Goal 1: To prevent damage associated with landslides.

  - Objective 1.1: Protect the safety of our residents from known hazards.

    - **Action 1.1.1:** Follow the procedures outlined in the Emergency Operations Plan of the City of Riverbank.
    - **Action 1.1.2:** Establish setbacks for all structures from known landslide prone areas.
    - **Action 1.1.3:** Implement and ensure compliance with all provisions of the City's grading ordinance.
    - **Action 1.1.4**: Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.

  - Objective 1.2: Ensure key personnel are NIMS trained.
    - **Action 1.2.1:** Plan for succession in emergency services training
    - **Action 1.2.2:** Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.

DAM FAILURE

- Goal 1: To get residents out of harms way

  - Objective 1.1: Facilitate a calm and safe evacuation of the City.
    - **Action 1.1.1:** Follow the procedures outlined in the Emergency Operations Plan of the City of Riverbank.
    - **Action 1.1.2:** Put emergency preparedness information on our access channel and web site, informing residents of the need to flee to Waterford or Empire in case of dam failure.
    - **Action 1.1.2**: Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.

  - Objective 1.2: Ensure key personnel are NIMS trained.
    - **Action 1.2.1:** Plan for succession in emergency services training
    - **Action 1.2.2:** Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.

FLOODING:

- Goal 1: Reduce flood damage in Riverbank.

  - Objective 1.1: Minimize future damage due to the flooding of the Stanislaus River.

    - **Action 1.1.1:** Continue to enforce the provisions of the flood plain management overlay district of the zoning code.
    - **Action 1.1.2:** Ensure that improvements to Jacob Myers Park design will take into account periodic flooding of Stanislaus River to ensure that minimal damage is done.
    - **Action 1.1.3:** Continue to maintain a buffer between the existing Wastewater Treatment Plant and expansion of the Plant.
    - **Action. 1.1.4:** Work with the Corp of Engineers to ensure that periodic inspections of levies are done along the Stanislaus River.

  - Objective 1.2: Minimize future damage due to storm events.

- **Action 1.2.1:** Continue to require the construction of storm water management facilities with adequate size to alleviate periodic flooding associated with storm events.
- **Action 1.2.2:** Continue to implement the Storm Water Prevention Plant to minimize the risk of contamination association with flooding event.
- **Action 1.2.3:** Follow the procedures outlined in the Emergency Operations Plan for the City of Riverbank.
- **Action 1.2.4**: Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.

o Objective 1.3: Ensure key personnel are NIMS trained.

- **Action 1.3.1:** Plan for succession in emergency services training
- **Action 1.3.2:** Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.

REQUIREMENT - §201.6(C)(3)(iii)

Section 5.3 – Implementation of Mitigation Actions

The City of Riverbank has identified several hazard mitigation actions to be included in the Hazard Mitigation Plan. Table 3: Priority Actions lists actions by hazard. Table 4: Implementation Strategy contains these actions, along with the responsible agency, the funding source, and implementation time frame.

The City of Riverbank will utilize a combination of funding sources to ensure proper funding levels. Funding sources may be used to improve all areas as identified in the STAPLE+E process. These sources include:

- System Development Fees from new development in identified hazard areas.
- Federal and state grant funds.
- General Fund.
- Redevelopment Agency tax increment and bond proceeds.
- Operational Area Council grant funds.
- Other sources as identified by the Capital Improvement Project Program.

The Hazard Mitigation Planning Committee prioritized the actions using the STAPLE+E criteria, a planning tool used to evaluate alternative actions. The following table explains the STAPLE+E criteria.

STAPLE+E	Criteria Explanation
S – Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.
T – Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal

	secondary adverse impacts.
A – Administration	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P – Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L – Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
E – Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.
E – Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

Each team member had an equal number of votes to use toward the actions that met the criteria best, based on their knowledge and expertise. The mitigation actions with highest priority were the most cost effective and most compatible with the communities' social and cultural values.

Table 2: Priority Actions

Hazard	Action	Priority
Earthquake	Continue to examine plans and perform inspections in accordance with the California Building standards.	HIGH
Earthquake	Continue to build infrastructure designed by Registered Civil Engineers and inspected by certified personnel.	HIGH
Earthquake	Follow the procedures outlined in the Emergency Operations Plan for the City of Riverbank.	HIGH
Earthquake	Encourage downtown revitalization efforts to include seismic retrofitting of historical structures.	MEDIUM
Earthquake	Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.	MEDIUM

Earthquake	Continue the public works department efforts in preventing debris from entering the storm water system.	MEDIUM
Earthquake	Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.	MEDIUM
Earthquake	Plan for succession in emergency services training	LOW
Earthquake	Facilitate massive evacuation by support and encourage the deployment of intelligent transportation devices to facilitate emergency responses as well as evacuation procedures.	LOW
Landslides	Follow the procedures outlined in the Emergency Operations Plan of the City of Riverbank.	HIGH
Landslides	Establish setbacks for all structures from known landslide prone areas.	MEDIUM
Landslides	Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.	MEDIUM
Landslides	Implement and ensure compliance with all provisions of the City's grading ordinance.	MEDIUM
Landslides	Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.	MEDIUM
Landslides	Plan for succession in emergency services training	LOW
Dam Failure	Put emergency preparedness information on our access channel, and web site, informing residents of the need to flee to Waterford or Empire in case of dam failure.	HIGH
Dam Failure	Follow the procedures outlined in the Emergency Operations Plan of the City of Riverbank.	HIGH
Dam Failure	Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.	MEDIUM
Dam Failure	Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.	MEDIUM
Dam Failure	Plan for succession in emergency services training	LOW
Flooding	Continue to enforce the provisions of the flood plain management overlay district of the zoning code.	HIGH
Flooding	Work with the Corp of Engineers to ensure that periodic inspections for levies are done along the Stanislaus River.	HIGH

Flooding	Continue to require the construction of storm water management facilities with adequate size to alleviate periodic flooding associated with storm events.	HIGH
Flooding	Follow the procedures outlined in the Emergency Operations Plan for the City of Riverbank	HIGH
Flooding	Ensure that improvements to Jacob Myers Park design will take into account periodic flooding of Stanislaus River to ensure that minimal damage is done.	MEDIUM
Flooding	Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps.	MEDIUM
Flooding	Continue to maintain a buffer between the existing Wastewater Treatment Plant and expansion of the Plant.	MEDIUM
Flooding	Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel.	MEDIUM
Flooding	Continue to implement the Storm Water Prevention Plant to minimize the risk of contamination association with flooding event	MEDIUM
Flooding	Plan for succession in emergency services training	LOW

Table 3: Implementation Strategy		
Action/Priority	Responsible Agency	Funding and Timeframe/Deadline
Follow the procedures outlined in the Emergency Operations Plan for the City of Riverbank. (HIGH)	City of Riverbank Administrative Services Department, Community Development Department, Emergency Coordinator, and Public Works Dept.	General Fund Ongoing
Continue to enforce the provisions of the flood plain management overlay district of the zoning code. (HIGH)	City of Riverbank Community Development Department	General Fund; System Development Fees Ongoing
Work with the Corp of Engineers to ensure that periodic inspections for levies are done along the	City of Riverbank Public Works Department	General Fund/System Development Fees Ongoing

Stanislaus River. (HIGH)		
Continue to require the construction of storm water management facilities with adequate size to alleviate periodic flooding associated with storm events. (HIGH)	City of Riverbank Community Development Department and Public Works Department	General Fund; System Development Fees; Grants Ongoing
Continue to examine plans and perform inspections in accordance with the California Building standards. (HIGH)	City of Riverbank Community Development Department and Public Works	General Fund; System Development Fees; Grants Ongoing
Continue to build infrastructure designed by Registered Civil Engineers and inspected by certified personnel. (HIGH)	City of Riverbank Building Department and Public Works Department	General Fund; System Development Fees; Grants Ongoing
Put emergency preparedness information on our access channel, and web site, informing residents of the need to flee to Waterford or Empire in case of dam failure. (MEDIUM)	City of Riverbank Administrative Services Department.	General Fund; Grant Funding Ongoing
Ensure that improvements to Jacob Myers Park design will take into account period flooding of Stanislaus River to ensure that minimal damage is done. (MEDIUM)	City of Riverbank Community Development Department and Public Works	General Fund; System Development Fees; Grants; Other Sources Ongoing
Continue to maintain a buffer between the existing Wastewater Treatment Plant and expansion of the Plant. (MEDIUM)	City of Riverbank Community Development Department and Public Works	General Fund; System Development Fees Ongoing

Continue to implement the Storm Water Prevention Plant to minimize the risk of contamination association with flooding event. (MEDIUM)	City of Riverbank Community Development Department and Public Works	General Fund; System Development Fees; Grant Funding Ongoing
Encourage downtown revitalization efforts to include seismic retrofitting OF historical structures. (MEDIUM)	City of Riverbank Building Department and Public Works Department	General Fund; System Development Fees; Grants; Other Sources Ongoing
Continue the public works department efforts in preventing debris from entering the storm water system. (MEDIUM)	City of Riverbank Public Works Dept.	General Fund; Grants; Other Sources Ongoing
Establish setbacks for all structures from know landslide prone areas. (MEDIUM)	City of Riverbank Building Dept.	General Fund
Coordinate regular training of NIMS for all employees, and advanced courses for key management personnel. (MEDIUM)	City of Riverbank Administrative Services Department	Operational Area Council grant funds
Enable the public to prepare for, respond to, and recover from disasters by improving hazard information and GIS maps. (MEDIUM)	City of Riverbank Administrative Services Department, Public Works, and the Community Development Department	General Fund
Implement and ensure compliance with all provisions of the City's grading ordinance. (MEDIUM)	City of Riverbank Community Development Department and Public Works	General Fund
Facilitate massive evacuation by support and encourage the deployment of intelligent transportation devices to facilitate	City of Riverbank Police Department, Community Development Dept., Public Works	General Fund; System Development Fees; Grants; Other Sources Ongoing

emergency responses as well as evacuation procedures. (LOW)	Department, and Emergency Services.	

REQUIREMENT - §201.6(C)(3)(iv)

Section 5.4 – Multi-jurisdictional Mitigation Actions – Provided by Stanislaus County

SECTION 6 – PLAN MAINTENANCE PROCEDURES

REQUIREMENT - §201.6(C)(4)(i)

Section 6.1 – Monitoring, Evaluating, and Updating Plan

The City of Riverbank has developed a method to ensure that an annual review and update of the Hazard Mitigation Plan occurs, although FEMA regulations only require an update every five years. The City has formed a Hazard Mitigation Plan Evaluation Committee that consists of members from local agencies and other concerned parties, including the County Office of Emergency Services, Environmental Health, Modesto Irrigation District, and representatives from the school districts. The Riverbank Community Development Department is responsible for contacting committee members and organizing the annual meeting, and committee members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the plan.

The committee will review each goal and objective to determine their relevance to changing situations in the City, as well as changes in State or Federal policy, and to ensure that they are addressing current and expected conditions. The committee will also review the risk assessment portion of the plan to determine if the information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects and will include which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding, and which strategies should be revised.

The Planning Department will then make changes to the plan before submitting it to the Committee members and the State Hazard Mitigation Officer. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification for this determination. Comments and recommendations offered by Committee members and the State Hazard Mitigation Officer will be incorporated into the plan.

In addition, the City of Riverbank has a number of other plans that will be considered and integrated into the Hazard Mitigation Plan as they undergo their regular updates:

- Safety Element of the General Plan – updated in 2008.
- Capital Improvement Plan – updated in 2008.
- Redevelopment Plan – updated in 2009
- Emergency Operations Plan – updated in 2010

The Hazard Mitigation Plan will take into account any changes in these plans and incorporate information accordingly in its next update.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
PLAN MAINTENANCE

REQUIREMENT - §201.6(C)(4)(ii)

Section 6.2 – Incorporation into Existing Planning Mechanisms

The Planning Commission of the City of Riverbank, acting as the Hazard Mitigation Plan Evaluation Committee, meets on a monthly basis, will provide a mechanism for ensuring that the actions identified in the plans are incorporated into on-going City of Riverbank planning activities.

The City of Riverbank currently utilizes comprehensive land use planning, capital improvements planning, and building codes to guide and control development within the City. After the City officially adopts the Hazard Mitigation Plan, these existing mechanisms will have hazard mitigation strategies incorporated into them.

After adoption of the Mitigation Plan, the City will require that property owners and the development community to address hazards into development projects. Specifically, one of the goals in the Mitigation Plan directs the City to protect life and property from natural disasters and manmade hazards. The Community Development Department will conduct periodic reviews of the City's General Plan, analyze any General Plan Amendment and provide technical assistance to property owners and the development community in implementing these requirements.

The Building Division of the Community Development Department is responsible for administering the building codes in the City of Riverbank. After the adoption of the Mitigation Plan, they will work with the State Building Standards Commission to make sure that the City adopts, and is enforcing, the minimum standards established in the California Building Code. This is to ensure that life/safety criteria are met for new construction.

The capital improvement planning that occurs in the future will also contribute to the goals in the Hazard Mitigation Plan. The City of Riverbank Community

Development Department will work with the City Engineering, Public Works Department, Economic Development & Housing Department, and the Stanislaus Consolidated Fire District to secure high-hazard areas from low risk uses.

Within six months of the formal adoption of the Mitigation Plan, the policies listed above will be incorporated into the process of existing planning mechanisms.

CITY OF RIVERBANK
LOCAL HAZARD MITIGATION PLAN
PLAN MAINTENANCE

REQUIREMENT - §201.6(C)(4)(iii)

Section 6.3 – Continued Public Involvement

The City of Riverbank is dedicated to involving the public directly in the continual reshaping and updating of the Hazard Mitigation Plan. The Hazard Mitigation Plan Evaluation Committee members are responsible for the annual review and update of the plan. Although they represent the public to some extent, the public will be able to directly comment on and provide feedback about the plan.

A copy of the plan will be kept on hand at all the public library in the City. Contained in the plan is the address and phone number of the City Community Development Department staff member(s) responsible for keeping track of public comments on the plan. In addition, copies of the plan and any proposed changes will be posted on the City Government Website.

A public meeting will be held each time the Hazard Mitigation Plan is updated. This meeting will provide the public a forum for which they can express concerns, opinions, or ideas about the plan. Following the meeting, the evaluation committee will review the comments and make changes to the plan, as appropriate.